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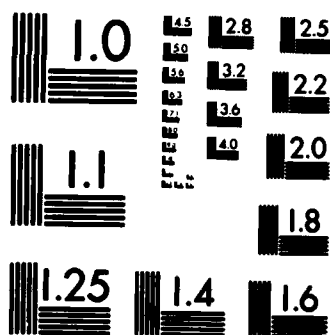
193188 MLRS MISSILE NUMBER 432 382 389 371 400 361  
ROUND NUMBER V653/FE-2. (U) ARMY ELECTRONICS RESEARCH  
AND DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER  
AUG 84 ERADCOM/ASL-DR-1357 F/G 4/2

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NATIONAL BUREAU OF STANDARDS-1963-A

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Aug 84

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AD-A146 457

METEOROLOGICAL DATA REPORT

19318B MLRS

Missile Number 432, 382, 389, 371, 400, 361

Round Number V653/FE-25 Thru V658/FE-30

17 August 1984

by

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Program Support Coordinator

Phone Number (505) 679-9568

AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>Meteorological data gathered for the launching of the 19318B MLRS, Missile Number 432, 382, 389, 371, 400, 361, Round Number V653/FE-25 Thru V658/FE-30 are presented in tabular form. |                                    |  |

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## INTRODUCTION

19318B MLRS, Missile Numbers 432, 382, 389, 371, 400 and 361, Round Number V653/FE-25 Thru V-658/FE-30, were launched from LC-33, White Sands Missile Range (WSMR). New Mexico, at 1304:55, 1304:59, 1305:04, 1305:08, 1305:13 and 1305:17 MDT, 17 Aug 84. The scheduled launch times were 1300 MDT with a 4.5 second separation.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

#### SITE AND ALTITUDE

|          |      |
|----------|------|
| LC-39    | 2 km |
| DON SITE | 2 km |

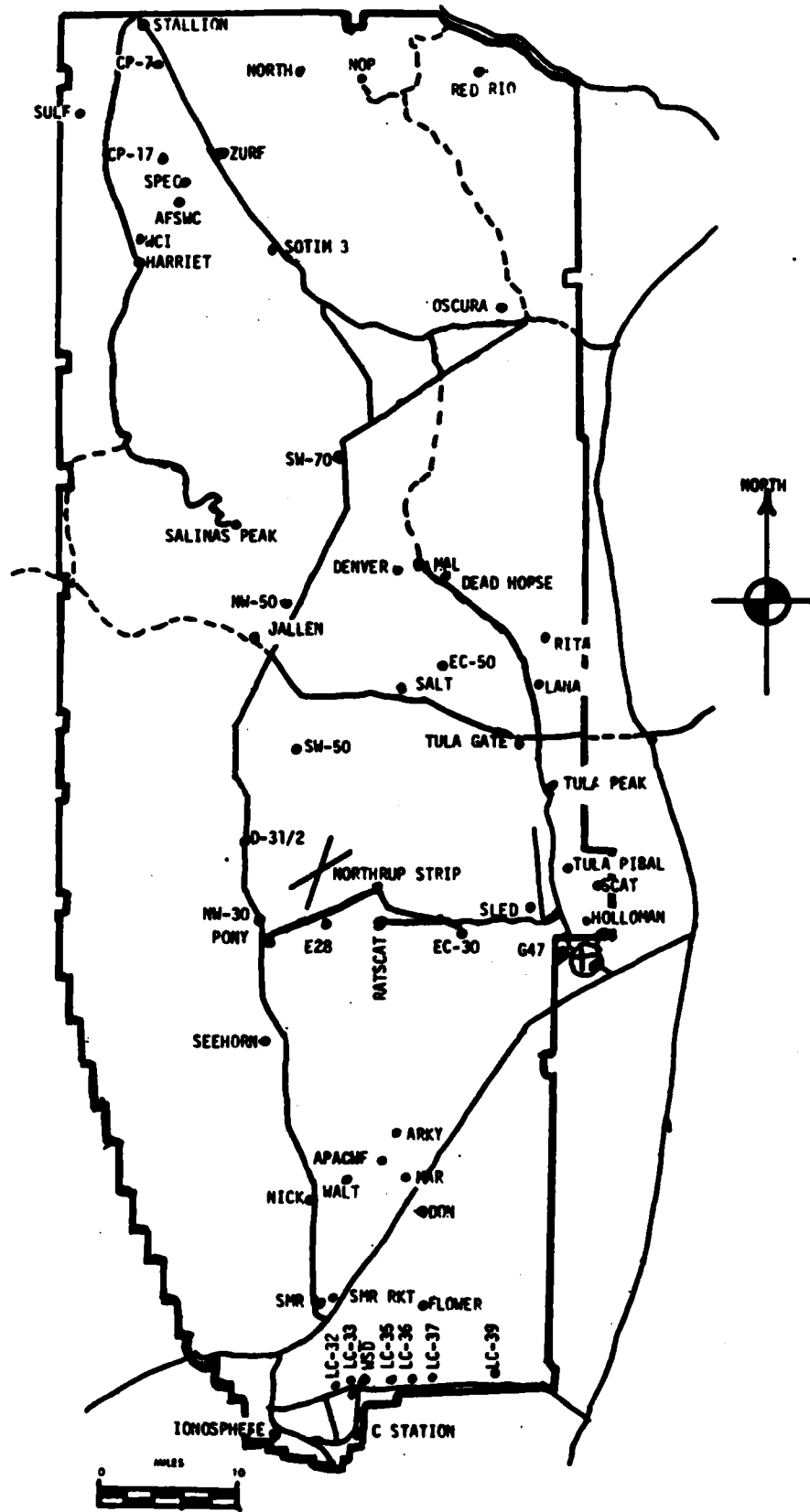
(2) Air structure data (rawinsonde) were collected at the following Met Sites.

#### SITE AND TIME

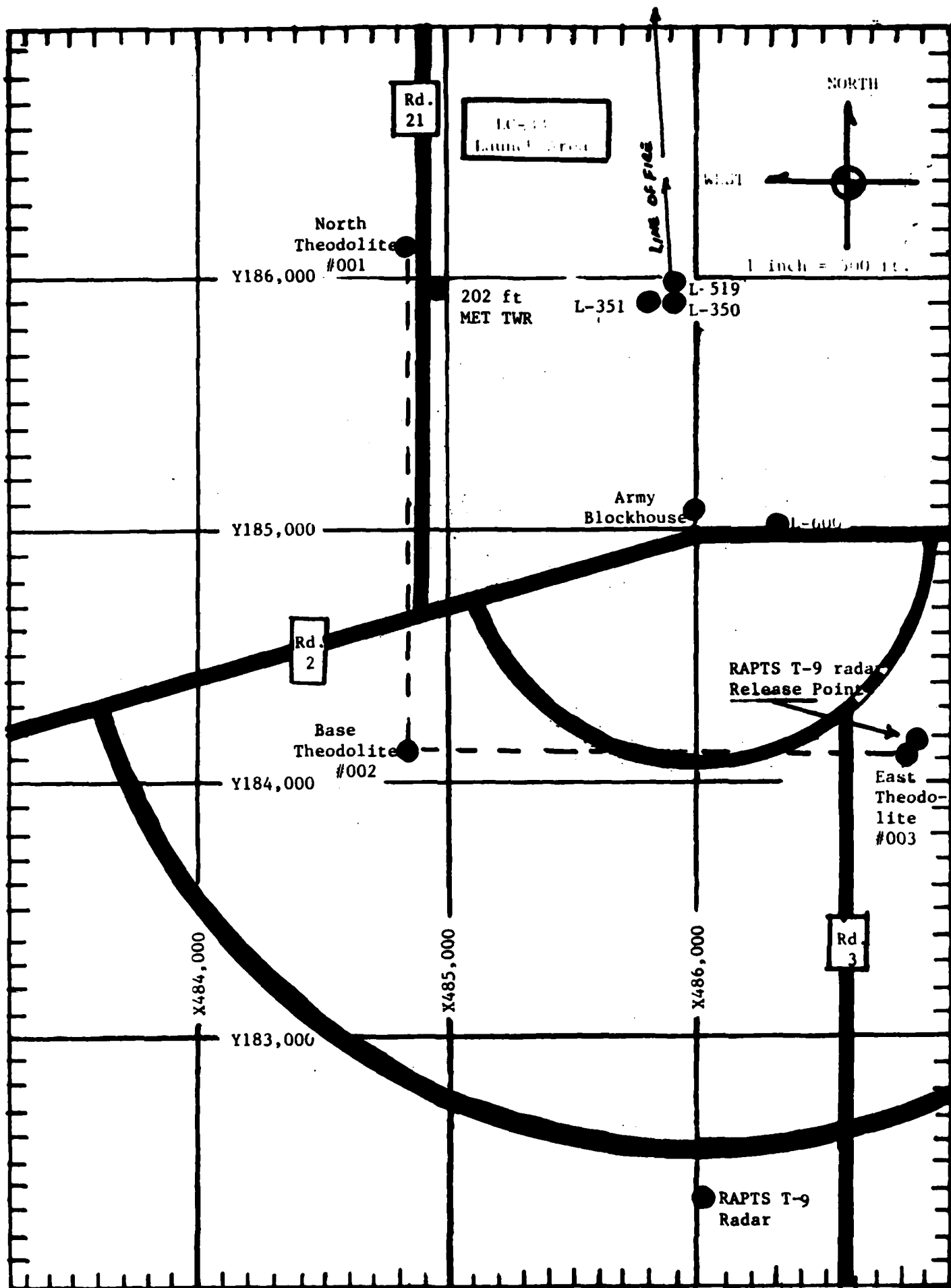
|                           |
|---------------------------|
| WSD 1130, 1215 & 1305 MDT |
| SMR 1130, 1215 & 1305 MDT |

|                    |                                     |
|--------------------|-------------------------------------|
| Accession For      |                                     |
| NTIS GRA&I         | <input checked="" type="checkbox"/> |
| DTIC TAB           | <input type="checkbox"/>            |
| Unannounced        | <input type="checkbox"/>            |
| Justification      |                                     |
| By                 |                                     |
| Distribution/      |                                     |
| Availability Codes |                                     |
| Dist               | Avail and/or Special                |
| A-1                |                                     |

# WSMR METEOROLOGICAL SITES







# PROJECT SURFACE OBSERVATION

|                       |              |  |  |
|-----------------------|--------------|--|--|
| TABLE <u>1</u>        |              | STATION <u>LC-33</u>                     |  |
| DATE <u>17</u>        | <u>Aug</u>   | <u>1984</u>                              |  |
| <u>DAY</u>            | <u>MONTH</u> | <u>YEAR</u>                              |  |
| X = <u>484,982.64</u> |              | Y = <u>185,957.73</u> H = <u>3995.00</u> |  |

| TIME<br>M D I | PRESSURE<br>mbs | TEMPERATURE<br>OF | DEW POINT<br>OF | RELATIVE<br>HUMIDITY<br>% | DENSITY<br>gm/m <sup>3</sup> | WIND              |                    | VISIBIL-<br>ITY |
|---------------|-----------------|-------------------|-----------------|---------------------------|------------------------------|-------------------|--------------------|-----------------|
|               |                 |                   |                 |                           |                              | DIRECTION<br>degs | SPEED<br>Tn<br>kts |                 |
| 1305          | 882.9           | 27.3              | 13.7            | 47                        |                              | 140               | 03                 | 40              |
|               |                 |                   |                 |                           |                              |                   |                    |                 |
|               |                 |                   |                 |                           |                              |                   |                    |                 |
|               |                 |                   |                 |                           |                              |                   |                    |                 |

| OBSTRUCTIONS<br>TO VISIBILITY | CLOUDS    |      |           |     |           |     | REMARKS    |
|-------------------------------|-----------|------|-----------|-----|-----------|-----|------------|
|                               | 1st LAYER |      | 2nd LAYER |     | 3rd LAYER |     |            |
|                               | AMT       | TYPE | HGT       | AMT | TYPE      | HGT |            |
| 1                             | CU        | 6000 | 3         | CI  | 25000     |     | TC U E, NW |
|                               |           |      |           |     |           |     |            |
|                               |           |      |           |     |           |     |            |
|                               |           |      |           |     |           |     |            |

## PSYCHROMETRIC COMPUTATION

|                 |      |  |
|-----------------|------|--|
| TIME: MDT       | 1305 |  |
| DRY BULB TEMP.  | 27.3 |  |
| WET BULB TEMP.  | 18.2 |  |
| WET BULB DEPR.  | 9.1  |  |
| DEW POINT       | 13.7 |  |
| RELATIVE HUMID. | 47   |  |

**LC-33 METEOROLOGICAL TOWER  
ANEMOMETER MEASURED WIND DATA**

WSTM COORDINATES X=484,982.64 Y=185,957.73 H=3983.00(BASE)

TABLE NO. 2

DATE 17 Aug 1984 1305 M D T  
DAY MONTH YEAR TIME

| LEVEL #1 12 FT AGL |          |            | LEVEL #2 62 FT AGL |          |            |
|--------------------|----------|------------|--------------------|----------|------------|
| T-TIME(SEC)        | DIR(DEG) | SPEED(KTS) | T-TIME(SEC)        | DIR(DEG) | SPEED(KTS) |
| T-30               | 152      | 09         | T-30               | 157      | 10         |
| T-20               | 151      | 09         | T-20               | 152      | 10         |
| T-10               | 163      | 09         | T-10               | 46       | 80         |
| T- 0(1st T)        | 171      | 07         | T- 0(1st T)        | 151      | 06         |
| T+10               | 167      | 06         | T+10               | 166      | 08         |
| T+20               | 164      | 08         | T+20               | MISSING  |            |
| T+30               | 162      | 09         | T+30               | 144      | 09         |
| T+40               |          |            | T+40               |          |            |
| T+50               |          |            | T+50               |          |            |
| T+60               |          |            | T+60               |          |            |

| LEVEL #3 102 FT AGL |          |            | LEVEL #4 202 FT AGL |          |            |
|---------------------|----------|------------|---------------------|----------|------------|
| T-TIME(SEC)         | DIR(DEG) | SPEED(KTS) | T-TIME(SEC)         | DIR(DEG) | SPEED(KTS) |
| T-30                | 147      | 10         | T-30                | 128      | 09         |
| T-20                | 154      | 08         | T-20                | 121      | 09         |
| T-10                | 150      | 07         | T-10                | 114      | 07         |
| T- 0(1st T)         | 158      | 07         | T- 0(1st T)         | 127      | 11         |
| T+10                | 169      | 09         | T+10                | 123      | 11         |
| T+20                | 143      | 11         | T+20                | 122      | 11         |
| T+30                | 146      | 10         | T+30                | 123      | 10         |
| T+40                |          |            | T+40                |          |            |
| T+50                |          |            | T+50                |          |            |
| T+60                |          |            | T+60                |          |            |

## T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 17 Aug 84

SITE: LC-33

TIME: 1305 MDT

WSTM COORDINATES:

X=

Y=

H=

SITE: DON

TIME 1305 MDT

WSTM COORDINATES:

X=

Y=

H=

| LAYER MIDPOINT<br>METERS AGL | DIRECTION<br>DEGREES | SPEED<br>KNOTS |
|------------------------------|----------------------|----------------|
| SURFACE                      | 140                  | 03             |
| 150                          | 182                  | 01             |
| 210                          | 223                  | 05             |
| 270                          | 191                  | 06             |
| 330                          | 204                  | 07             |
| 390                          | 205                  | 07             |
| 500                          | 205                  | 07             |
| 650                          | 208                  | 06             |
| 800                          | 197                  | 07             |
| 950                          | 189                  | 07             |
| 1150                         | 193                  | 08             |
| 1350                         | 192                  | 08             |
| 1550                         | 186                  | 10             |
| 1750                         | 187                  | 12             |
| 2000                         | 182                  | 21             |

| LAYER MIDPOINT<br>METERS AGL | DIRECTION<br>DEGREES | SPEED<br>KNOTS |
|------------------------------|----------------------|----------------|
| SURFACE                      | 180                  | 12             |
| 150                          | 181                  | 05             |
| 210                          | 170                  | 08             |
| 270                          | 173                  | 10             |
| 330                          | 163                  | 11             |
| 390                          | 164                  | 10             |
| 500                          | 165                  | 12             |
| 650                          | 163                  | 10             |
| 800                          | 164                  | 12             |
| 950                          | 154                  | 11             |
| 1150                         | 161                  | 13             |
| 1350                         | 144                  | 15             |
| 1550                         | 144                  | 15             |
| 1750                         | 139                  | 15             |
| 2000                         | 128                  | 11             |

All data obtained from RAPTS T-9 radar tracked pilot-balloon observations.

TABLE 4

## AIMING AND T-TIME COMPUTER MET MESSAGE DATA

17 August 1984

WSD 1130 MDT  
METCM1324064  
171750122884

|          |          |
|----------|----------|
| 00373002 | 30080884 |
| 01367005 | 29870874 |
| 02285007 | 29550849 |
| 03317007 | 29180810 |
| 04245007 | 28820764 |
| 05244011 | 28390720 |
| 06221010 | 28050678 |

SMR 1130 MDT  
METCM1325064  
171750122883

|          |          |
|----------|----------|
| 00320002 | 30300883 |
| 01297005 | 29820873 |
| 02312007 | 29550849 |
| 03322007 | 29230810 |
| 04261009 | 28840764 |
| 05240011 | 28450720 |
| 06213011 | 28110678 |

WSD 1215 MDT  
METCM1324064  
171830122883

|          |          |
|----------|----------|
| 00338007 | 30200883 |
| 01308005 | 29990873 |
| 02255005 | 29660848 |
| 03260007 | 29280810 |
| 04248007 | 28810763 |
| 05264012 | 28450719 |
| 06256010 | 28150677 |

SMR 1215 MDT  
METCM1325064  
171830122883

|          |          |
|----------|----------|
| 00302006 | 30340883 |
| 01299009 | 29970873 |
| 02286011 | 29660848 |
| 03357006 | 29230810 |
| 04277007 | 28800764 |
| 05267012 | 28470720 |
| 06235009 | 28110677 |

WSD 1305 MDT  
METCM1324064  
171910122882

|          |          |
|----------|----------|
| 00000000 | 30240882 |
| 01363006 | 30030872 |
| 02326005 | 29770848 |
| 03331008 | 29350810 |
| 04280010 | 28870764 |
| 05302012 | 28510719 |
| 06277012 | 28140677 |

SMR 1305 MDT  
METCM1325064  
171910122883

|          |          |
|----------|----------|
| 00320003 | 30400883 |
| 01249005 | 30050873 |
| 02253007 | 29770848 |
| 03296009 | 29370810 |
| 04338009 | 28940764 |
| 05317011 | 28530720 |
| 06286010 | 28090678 |

STATION ALTITUDE 2009.0, FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 427

1130 MDT

SIGNIFICANT LEVEL DATA

2700000427  
 WHITE SANDS  
 GEODETIC COORDINATES  
 32.00043 LAT DLG  
 106.77033 LON DLG

TABLE 5

| PRESSURE<br>MILLIBARS | GEODETIC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                         | REL. HUM.<br>PERCENT |
|-----------------------|----------------------------------|----------------|-------------------------|----------------------|
|                       |                                  | AIR<br>DEGREES | DEW-POINT<br>CENTIGRADE |                      |
| 553.6                 | 2987.0                           | 25.2           | 13.0                    | 45.0                 |
| 371.1                 | 4399.4                           | 23.2           | 10.9                    | 46.0                 |
| 350.0                 | 5099.4                           | 20.2           | 9.7                     | 47.0                 |
| 770.7                 | 7125.9                           | 15.5           | 5.7                     | 52.0                 |
| 770.9                 | 7842.3                           | 15.1           | 5.3                     | 52.0                 |
| 748.4                 | 3655.9                           | 11.9           | 5.0                     | 43.0                 |
| 743.1                 | 9007.4                           | 10.1           | 2.9                     | 61.0                 |
| 733.0                 | 10492.3                          | 7.9            | .6                      | 60.0                 |
| 657.7                 | 12175.0                          | 5.2            | -4.0                    | 51.0                 |
| 630.1                 | 13322.8                          | 3.0            | -8.3                    | 43.0                 |
| 603.9                 | 14448.7                          | .1             | -3.6                    | 76.0                 |

STATION ALTITUDE 3989.00 FEET MSL  
17 AUG. 64  
ASCENSION NO. 427

UPPER AIR DATA  
2307020427  
WHITE SANDS

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 6

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES | TEMPERATURE<br>DEWPOINT CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|----------------------------|------------------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                |                       |                            |                                    |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3989.0                         | 883.6                 | 25.5                       | 13.0                               | 45.0                 | 1023.1                       | 675.8                      | 210.0                    | 1.9            | 1.000291                  |
| 4000.0                         | 893.3                 | 25.7                       | 12.9                               | 45.0                 | 1022.9                       | 675.7                      | 209.5                    | 2.0            | 1.000291                  |
| 4500.0                         | 868.0                 | 22.9                       | 10.6                               | 46.4                 | 1015.8                       | 672.2                      | 191.1                    | 2.7            | 1.000282                  |
| 5000.0                         | 853.0                 | 21.1                       | 9.9                                | 48.6                 | 1004.2                       | 670.1                      | 181.1                    | 3.6            | 1.000277                  |
| 5500.0                         | 838.0                 | 19.8                       | 8.9                                | 49.6                 | 991.5                        | 668.5                      | 175.2                    | 4.5            | 1.000271                  |
| 6000.0                         | 823.2                 | 18.5                       | 7.9                                | 50.3                 | 978.7                        | 666.9                      | 171.3                    | 5.5            | 1.000266                  |
| 6500.0                         | 808.6                 | 17.2                       | 7.0                                | 51.1                 | 966.0                        | 665.3                      | 168.7                    | 6.4            | 1.000260                  |
| 7000.0                         | 794.5                 | 15.9                       | 6.0                                | 51.8                 | 953.5                        | 663.8                      | 160.7                    | 6.5            | 1.000255                  |
| 7500.0                         | 780.4                 | 15.3                       | 5.5                                | 52.0                 | 938.4                        | 663.1                      | 157.9                    | 6.6            | 1.000250                  |
| 8000.0                         | 765.5                 | 14.5                       | 5.2                                | 54.1                 | 924.4                        | 662.1                      | 145.7                    | 7.0            | 1.000247                  |
| 8500.0                         | 752.8                 | 12.4                       | 5.1                                | 60.9                 | 914.3                        | 659.8                      | 140.4                    | 8.1            | 1.000245                  |
| 9000.0                         | 739.3                 | 11.2                       | 4.2                                | 62.3                 | 901.9                        | 658.3                      | 136.4                    | 9.3            | 1.000240                  |
| 9500.0                         | 725.9                 | 10.5                       | 3.2                                | 61.2                 | 888.6                        | 657.2                      | 134.4                    | 10.2           | 1.000234                  |
| 10000.0                        | 712.8                 | 9.1                        | 1.9                                | 60.6                 | 876.4                        | 655.8                      | 133.6                    | 10.7           | 1.000229                  |
| 10500.0                        | 699.8                 | 7.9                        | .6                                 | 60.0                 | 864.5                        | 654.2                      | 132.9                    | 11.1           | 1.000223                  |
| 11000.0                        | 687.0                 | 7.1                        | -.7                                | 57.3                 | 851.2                        | 653.2                      | 128.9                    | 10.3           | 1.000218                  |
| 11500.0                        | 674.4                 | 6.3                        | -2.1                               | 54.6                 | 838.1                        | 652.3                      | 122.7                    | 9.1            | 1.000212                  |
| 12000.0                        | 662.0                 | 5.6                        | -3.5                               | 51.9                 | 825.2                        | 651.3                      |                          |                | 1.000207                  |
| 12500.0                        | 649.6                 | 4.8                        | -5.2                               | 48.7                 | 812.9                        | 650.1                      |                          |                | 1.000201                  |
| 13000.0                        | 637.7                 | 3.6                        | -7.1                               | 45.3                 | 800.9                        | 648.8                      |                          |                | 1.000196                  |
| 13500.0                        | 625.9                 | 2.5                        | -7.3                               | 48.2                 | 789.2                        | 647.5                      |                          |                | 1.000193                  |
| 14000.0                        | 614.2                 | 1.3                        | -5.0                               | 62.8                 | 777.7                        | 646.2                      |                          |                | 1.000194                  |

STATION ALTITUDE 3089.00 FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 427

MANDATORY LEVELS  
 2300020427  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.37033 LON DEG

TABLE 7

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|--------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                 | 5096.  | 20.3           | 9.7                    | 49.                  | 179.7                    | 3.7            |
| 900.0                 | 6204.  | 16.4           | 6.4                    | 52.                  | 163.8                    | 6.5            |
| 750.0                 | 8597.  | 12.0           | 5.0                    | 62.                  | 139.5                    | 8.4            |
| 700.0                 | 10482. | 7.9            | .6                     | 60.                  | 132.9                    | 11.1           |
| 450.0                 | 12478. | 4.7            | -5.2                   | 49.                  |                          |                |



GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
2300060146  
S M R

STATION ALTITUDE 3997.30 FEET MSL  
17 AJ6. 54  
ASCENSION NO. 140 1130 MDT

TABLE 8

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS WSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--|----------------|------------------------|----------------------|
|  | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 883.4 3997.3   | 23.0           | 13.1                   | 40.0                 |
| 861.4 4062.9   | 24.1           | 10.4                   | 42.0                 |
| 850.0 5099.8   | 20.5           | 11.7                   | 57.0                 |
| 700.0 10500.8  | 6.6            | 1.3                    | 60.0                 |
| 677.5 11387.7  | 7.3            | -1.9                   | 52.0                 |
| 660.5 12073.3  | 5.2            | -0.4                   | 67.0                 |
| 634.8 13136.2  | 3.2            | -3.1                   | 63.0                 |

STATION ALTITUDE 3997.20 FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 140

UPPER AIR DATA  
 2300050146  
 S M R  
 TABLE 9

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LON DEG

| GEOMETRIC ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR DEGREES<br>DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|--------------------------------|-----------------------|--|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 3997.3                         | 833.4                 | 23.0   | 40.0                 | 1015.3                       | 678.3                      | 180.0                                 | 1.9            | 1.000290                  |
| 4000.0                         | 833.5                 | 27.8   | 40.1                 | 1015.8                       | 678.1                      | 180.0                                 | 1.9            | 1.000289                  |
| 4500.0                         | 868.0                 | 22.6   | 48.3                 | 1016.6                       | 671.9                      | 182.6                                 | 3.2            | 1.000284                  |
| 5000.0                         | 853.0                 | 20.8   | 55.6                 | 1004.6                       | 670.0                      | 183.7                                 | 4.4            | 1.000284                  |
| 5500.0                         | 837.9                 | 19.6   | 57.2                 | 991.1                        | 668.6                      | 184.4                                 | 5.6            | 1.000279                  |
| 6000.0                         | 822.9                 | 15.5   | 57.5                 | 977.4                        | 667.2                      | 182.0                                 | 6.7            | 1.000272                  |
| 6500.0                         | 805.3                 | 17.4   | 57.8                 | 963.8                        | 665.9                      | 177.8                                 | 7.7            | 1.000266                  |
| 7000.0                         | 793.9                 | 19.3   | 53.1                 | 950.5                        | 664.5                      | 169.9                                 | 8.2            | 1.000261                  |
| 7500.0                         | 779.7                 | 15.2   | 58.3                 | 937.4                        | 663.2                      | 160.2                                 | 8.6            | 1.000255                  |
| 8000.0                         | 765.8                 | 14.1   | 58.6                 | 924.4                        | 661.8                      | 147.3                                 | 8.6            | 1.000249                  |
| 8500.0                         | 752.2                 | 13.0   | 58.9                 | 911.7                        | 660.5                      | 133.4                                 | 8.8            | 1.000244                  |
| 9000.0                         | 738.8                 | 11.9   | 59.2                 | 899.1                        | 659.1                      | 132.0                                 | 10.0           | 1.000239                  |
| 9500.0                         | 725.6                 | 10.8   | 59.4                 | 886.7                        | 657.8                      | 131.6                                 | 11.2           | 1.000234                  |
| 10000.0                        | 712.7                 | 9.7  | 59.7                 | 874.4                        | 656.5                      | 134.4                                 | 11.2           | 1.000229                  |
| 10500.0                        | 700.0                 | 8.6  | 60.0                 | 862.4                        | 655.1                      | 135.2                                 | 11.2           | 1.000224                  |
| 11000.0                        | 687.2                 | 7.9  | 55.5                 | 849.2                        | 654.1                      | 127.2                                 | 10.7           | 1.000216                  |
| 11500.0                        | 674.7                 | 7.0  | 54.5                 | 836.5                        | 653.0                      |                                       |                | 1.000213                  |
| 12000.0                        | 662.3                 | 5.4  | 65.4                 | 825.4                        | 651.3                      |                                       |                | 1.000213                  |
| 12500.0                        | 650.1                 | 4.4  | 65.4                 | 813.3                        | 650.1                      |                                       |                | 1.000208                  |
| 13000.0                        | 638.0                 | 3.5  | 63.5                 | 801.2                        | 648.9                      |                                       |                | 1.000203                  |

STATION ALTITUDE 3997.17 FEET MSL

17 AUG. 84

ASCENSION NO. 146

MANDATORY LEVELS

2300060146

S 4 R

GEODETIC COORDINATES

32.48034 LAT DEG

106.42307 LONG DEG

TABLE 10

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|--------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TM) | SPEED<br>KNOTS |
| 850.0                 | 5796.  | 20.5           | 11.7                   | 57.                  | 183.9                    | 4.6            |
| 900.0                 | 6906.  | 16.8           | 8.5                    | 58.                  | 173.9                    | 5.1            |
| 750.0                 | 8600.  | 12.8           | 5.0                    | 59.                  | 132.6                    | 9.1            |
| 700.0                 | 10490. | 8.6            | 1.3                    | 60.                  | 135.2                    | 11.2           |
| 650.0                 | 12490. | 4.4            | -1.5                   | 65.                  |                          |                |

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

SIGNIFICANT LEVEL DATA  
2300020428  
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL  
17 AUG. 84  
ASCENSION NO. 428 1215 MDT

TABLE 15

| PRESSURE<br>MILLIBARS | GLOMETRIC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
|                       |                                   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 862.9                 | 3989.0                            | 26.8           | 13.2                   | 43.0                 |
| 863.7                 | 4623.2                            | 23.1           | 10.5                   | 45.0                 |
| 850.0                 | 5020.0                            | 22.0           | 9.9                    | 46.0                 |
| 901.4                 | 4748.0                            | 17.4           | 8.0                    | 54.0                 |
| 781.4                 | 7455.4                            | 15.3           | 7.1                    | 50.0                 |
| 738.9                 | 9003.7                            | 11.2           | 4.2                    | 62.0                 |
| 700.0                 | 10484.2                           | 9.2            | 1.1                    | 57.0                 |
| 666.8                 | 11884.1                           | 6.6            | -4.5                   | 45.0                 |
| 619.8                 | 13803.5                           | 1.7            | -2.8                   | 72.0                 |
| 600.8                 | 14585.3                           | .6             | -4.8                   | 67.0                 |

UPPER AIR DATA  
230002042P  
WHITE SANDS

STATION ALTITUDE 3955.00 FEET MSL  
17 AUG. 84  
ASCENSION NO. 428

1215 MDT

GEODETTIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 12

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND |       | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|-------------------|-------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              | KNOTS             | KNOTS | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3959.0                            | 992.9                 | 26.9           | 13.2                   | 43.0                 | 1018.7                       | 676.9             | 190.0 | 190.0                    | 7.0            | 1.000291                  |
| 4000.0                            | 982.6                 | 26.7           | 13.1                   | 43.0                 | 1018.6                       | 676.8             | 189.8 | 189.8                    | 7.0            | 1.000291                  |
| 4500.0                            | 967.4                 | 23.8           | 11.0                   | 44.6                 | 1011.7                       | 673.3             | 181.7 | 181.7                    | 6.7            | 1.000282                  |
| 5000.0                            | 952.4                 | 20.2           | 10.0                   | 45.8                 | 1000.0                       | 671.3             | 173.0 | 173.0                    | 6.6            | 1.000276                  |
| 5500.0                            | 937.2                 | 20.3           | 9.4                    | 48.0                 | 987.1                        | 669.8             | 164.2 | 164.2                    | 6.6            | 1.000272                  |
| 6000.0                            | 922.8                 | 19.5           | 9.9                    | 50.4                 | 974.5                        | 668.2             | 155.8 | 155.8                    | 6.8            | 1.000268                  |
| 6500.0                            | 908.4                 | 18.1           | 8.3                    | 52.9                 | 962.1                        | 666.6             | 148.0 | 148.0                    | 7.1            | 1.000263                  |
| 7000.0                            | 894.2                 | 16.7           | 7.7                    | 55.4                 | 949.9                        | 664.9             | 144.8 | 144.8                    | 7.1            | 1.000259                  |
| 7500.0                            | 880.1                 | 15.2           | 7.0                    | 58.1                 | 938.0                        | 663.1             | 141.5 | 141.5                    | 7.1            | 1.000255                  |
| 8000.0                            | 866.2                 | 13.9           | 6.1                    | 59.4                 | 925.7                        | 661.5             | 141.7 | 141.7                    | 7.7            | 1.000250                  |
| 8500.0                            | 852.5                 | 12.5           | 5.2                    | 60.7                 | 913.5                        | 659.9             | 143.7 | 143.7                    | 8.5            | 1.000245                  |
| 9000.0                            | 839.0                 | 11.2           | 4.2                    | 62.0                 | 901.5                        | 658.3             | 145.1 | 145.1                    | 9.5            | 1.000240                  |
| 9500.0                            | 825.6                 | 10.5           | 3.2                    | 60.3                 | 887.5                        | 657.5             | 145.9 | 145.9                    | 10.5           | 1.000234                  |
| 10000.0                           | 812.5                 | 9.9            | 2.1                    | 59.6                 | 873.7                        | 656.6             | 146.5 | 146.5                    | 11.6           | 1.000228                  |
| 10500.0                           | 799.6                 | 9.2            | 1.1                    | 56.9                 | 860.2                        | 655.8             | 145.5 | 145.5                    | 11.4           | 1.000223                  |
| 11000.0                           | 785.3                 | 8.2            | -0.9                   | 52.6                 | 847.6                        | 654.5             | 143.7 | 143.7                    | 10.7           | 1.000216                  |
| 11500.0                           | 774.3                 | 7.3            | -2.9                   | 48.3                 | 835.2                        | 653.3             | 142.4 | 142.4                    | 10.1           | 1.000210                  |
| 12000.0                           | 761.9                 | 6.3            | -4.3                   | 46.6                 | 823.1                        | 652.1             | 142.7 | 142.7                    | 9.4            | 1.000205                  |
| 12500.0                           | 749.7                 | 5.0            | -3.6                   | 53.7                 | 811.4                        | 650.7             | 143.0 | 143.0                    | 8.8            | 1.000204                  |
| 13000.0                           | 737.7                 | 3.8            | -3.1                   | 60.7                 | 799.9                        | 649.2             |       |                          |                | 1.000202                  |
| 13500.0                           | 725.9                 | 2.5            | -2.9                   | 67.7                 | 789.7                        | 647.7             |       |                          |                | 1.000200                  |
| 14000.0                           | 714.2                 | 1.4            | -3.3                   | 70.7                 | 777.0                        | 646.5             |       |                          |                | 1.000197                  |
| 14500.0                           | 702.7                 | .7             | -4.6                   | 67.5                 | 766.6                        | 645.6             |       |                          |                | 1.000192                  |

STATION ALTITUDE 3989.00 FEET MSL  
 17 AUG. 84 1215 MDT  
 ASCENSION NO. 423

MANDATORY LEVELS

23JCU2042P  
 WHITE SANDS

GEODETTIC COORDINATES  
 32.40043 LAT DEG  
 106.17033 LON DEG

TABLE 13

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|--------|----------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 950.0                 | 5077.  | 22.0           | 9.9                    | 46.                  | 171.6                    | 6.6            |
| 850.0                 | 6792.  | 17.3           | 7.9                    | 54.                  | 146.1                    | 7.1            |
| 750.0                 | 8585.  | 12.3           | 5.0                    | 61.                  | 144.0                    | 8.7            |
| 700.0                 | 10474. | 9.2            | 1.1                    | 57.                  | 145.5                    | 11.4           |
| 650.0                 | 12477. | 5.1            | -3.6                   | 53.                  | 143.0                    | 8.8            |

GEODETIC COORDINATES  
 32.42034 LAT DEG  
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
 2300060147  
 S M R

TABLE 14

STATION ALTITUDE 3997.30 FEET MSL  
 17 AUG. 84 1215 MDT  
 ASCENSION NO. 147

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--|----------------|------------------------|----------------------|
|  | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 893.0 3997.3   | 28.5           | 12.4                   | 37.0                 |
| 860.2 4089.5   | 25.7           | 9.1                    | 35.0                 |
| 850.0 5091.9   | 22.0           | 8.9                    | 43.0                 |
| 743.4 7038.1   | 15.9           | 7.7                    | 58.0                 |
| 773.9 7731.5   | 14.1           | 7.9                    | 66.0                 |
| 739.1 9004.3   | 12.0           | 2.7                    | 53.0                 |
| 700.0 10493.2  | 8.9            | .6                     | 56.0                 |
| 636.0 13078.2  | 3.5            | -8.5                   | 41.0                 |

STATION ALTITUDE 3497.70 FEET MSL  
17 AUG. 84  
ASCENSION NO. 147

UPPER AIR DATA  
2300060147  
S M R

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

TABLE 15

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE    |                        | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|----------------|------------------------|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3997.3                            | 683.0                 | 25.5           | 12.4                   | 37.0                 | 1013.5                       | 678.7                      | 170.0                    | 6.0            | 1.000286                  |
| 4000.0                            | 682.9                 | 25.4           | 12.3                   | 36.9                 | 1013.7                       | 678.6                      | 170.0                    | 6.0            | 1.000286                  |
| 4500.0                            | 667.7                 | 24.2           | 9.1                    | 36.3                 | 1011.5                       | 673.5                      | 170.5                    | 6.7            | 1.000275                  |
| 5000.0                            | 652.7                 | 22.3           | 8.9                    | 42.3                 | 1000.2                       | 671.4                      | 170.9                    | 7.4            | 1.000272                  |
| 5500.0                            | 637.8                 | 20.7           | 8.7                    | 46.1                 | 938.1                        | 669.5                      | 171.3                    | 8.0            | 1.000270                  |
| 6000.0                            | 623.1                 | 19.2           | 8.5                    | 50.0                 | 975.0                        | 667.8                      | 184.7                    | 7.0            | 1.000267                  |
| 6500.0                            | 608.7                 | 17.6           | 8.1                    | 53.9                 | 964.0                        | 666.0                      | 196.3                    | 6.3            | 1.000263                  |
| 7000.0                            | 594.5                 | 16.0           | 7.7                    | 57.7                 | 952.3                        | 664.1                      | 194.4                    | 5.5            | 1.000260                  |
| 7500.0                            | 580.4                 | 14.7           | 7.5                    | 63.3                 | 939.6                        | 662.7                      | 180.4                    | 5.4            | 1.000258                  |
| 8000.0                            | 566.4                 | 13.7           | 6.8                    | 63.3                 | 926.4                        | 661.4                      | 161.6                    | 6.5            | 1.000252                  |
| 8500.0                            | 552.7                 | 12.8           | 4.8                    | 58.2                 | 912.9                        | 660.2                      | 154.5                    | 8.3            | 1.000243                  |
| 9000.0                            | 539.2                 | 12.0           | 2.7                    | 53.0                 | 899.6                        | 659.1                      | 151.5                    | 10.2           | 1.000235                  |
| 9500.0                            | 525.8                 | 11.0           | 2.0                    | 54.0                 | 886.7                        | 657.9                      | 150.6                    | 10.7           | 1.000231                  |
| 10000.0                           | 512.7                 | 9.9            | 1.3                    | 55.0                 | 874.0                        | 656.6                      | 147.8                    | 10.7           | 1.000227                  |
| 10500.0                           | 499.8                 | 8.9            | .6                     | 56.0                 | 861.4                        | 655.4                      | 142.4                    | 10.3           | 1.000222                  |
| 11000.0                           | 487.0                 | 7.8            | -1.1                   | 53.1                 | 849.0                        | 654.1                      | 136.7                    | 9.5            | 1.000216                  |
| 11500.0                           | 474.3                 | 6.8            | -2.8                   | 50.2                 | 836.8                        | 652.7                      | 129.8                    | 8.7            | 1.000210                  |
| 12000.0                           | 462.0                 | 5.8            | -4.6                   | 47.3                 | 824.8                        | 651.4                      |                          |                | 1.000205                  |
| 12500.0                           | 449.8                 | 4.7            | -6.4                   | 44.4                 | 812.9                        | 650.1                      |                          |                | 1.000200                  |
| 13000.0                           | 437.8                 | 3.7            | -8.2                   | 41.5                 | 801.2                        | 648.8                      |                          |                | 1.000195                  |



STATION ALTITUDE 3947.70 FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 147

MANDATORY LEVELS  
 2300050147  
 S M R

GEODETIC COORDINATES  
 32.49034 LAT DEG  
 106.42307 LON DEG

TABLE 16

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE                  |                        | REL. HUM. |                          | WIND DATA      |  |
|-----------------------|--------|------------------------------|------------------------|-----------|--------------------------|----------------|--|
| MILLIBARS             | FEET   | AIR<br>DEGREES<br>CENTIGRADE | DEWPOINT<br>CENTIGRADE | PERCENT   | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |  |
| 850.0                 | 5059.  | 22.0                         | 8.9                    | 43.       | 171.0                    | 7.5            |  |
| 800.0                 | 6801.  | 16.6                         | 7.9                    | 56.       | 195.2                    | 5.8            |  |
| 750.0                 | 8593.  | 12.7                         | 4.4                    | 57.       | 153.8                    | 8.7            |  |
| 700.0                 | 10483. | 8.9                          | .6                     | 56.       | 142.5                    | 10.3           |  |
| 650.0                 | 12482. | 4.7                          | -6.3                   | 44.       |                          |                |  |

STATION ALTITUDE 3989.00 FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 429

SIGNIFICANT LEVEL DATA  
 2300020429  
 WHITE SANDS

TABLE 17

| PRESSURE GEOMETRIC<br>ALTITUDE<br>MILLIBARS MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|--|----------------|------------------------|----------------------|
|  | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 862.4 3989.0   | 27.3           | 12.9                   | 41.0                 |
| 877.1 4163.7   | 25.6           | 11.7                   | 42.0                 |
| 850.0 5067.0   | 23.1           | 10.5                   | 45.0                 |
| 775.3 7666.4   | 14.9           | 7.5                    | 61.0                 |
| 700.0 10483.3  | 9.4            | .3                     | 53.0                 |
| 660.3 12065.9  | 5.7            | -1.2                   | 61.0                 |
| 639.1 12940.2  | 2.9            | -2.2                   | 69.0                 |
| 605.5 14373.3  | .5             | -5.5                   | 64.0                 |

UPPER AIR DATA  
2300020429  
WHITE SANDS  
106.37033 LON DEG

STATION ALTITUDE 3959.00 FEET MSL  
17 AUG. 64  
ASCENSION NO. 429

GEODETIC COORDINATES  
32.40043 LAT DEG  
106.37033 LON DEG

TABLE 18

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA<br>DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|-------------------------------|------------------------|----------------------|------------------------------|----------------------------|---------------------------------------|----------------|---------------------------|
| 3959.0                            | 892.4                 | 27.3                          | 12.9                   | 41.0                 | 1016.6                       | 677.4                      | 0.0                                   | 0.0            | 1.000289                  |
| 4000.0                            | 892.1                 | 27.2                          | 12.6                   | 41.1                 | 1016.6                       | 677.3                      | 177.1                                 | 0.0            | 1.000289                  |
| 4500.0                            | 845.9                 | 24.7                          | 11.3                   | 43.1                 | 1008.1                       | 674.3                      | 177.1                                 | 1.6            | 1.000282                  |
| 5000.0                            | 852.0                 | 25.3                          | 10.6                   | 44.8                 | 995.5                        | 672.7                      | 177.1                                 | 3.2            | 1.000277                  |
| 5500.0                            | 837.1                 | 21.7                          | 10.1                   | 47.7                 | 983.3                        | 670.9                      | 177.1                                 | 4.9            | 1.000273                  |
| 6000.0                            | 822.4                 | 20.2                          | 9.6                    | 50.7                 | 971.4                        | 669.0                      | 177.1                                 | 6.4            | 1.000269                  |
| 6500.0                            | 808.0                 | 18.6                          | 9.1                    | 53.8                 | 959.6                        | 667.2                      | 177.0                                 | 7.9            | 1.000265                  |
| 7000.0                            | 793.9                 | 17.0                          | 8.4                    | 56.9                 | 945.0                        | 665.4                      | 171.4                                 | 9.0            | 1.000261                  |
| 7500.0                            | 779.9                 | 15.4                          | 7.7                    | 60.0                 | 935.7                        | 663.5                      | 166.9                                 | 10.1           | 1.000257                  |
| 8000.0                            | 766.0                 | 14.2                          | 6.6                    | 60.1                 | 924.0                        | 662.0                      | 164.6                                 | 10.8           | 1.000251                  |
| 8500.0                            | 752.2                 | 13.3                          | 5.4                    | 58.6                 | 910.8                        | 660.8                      | 164.6                                 | 10.9           | 1.000244                  |
| 9000.0                            | 738.7                 | 12.3                          | 4.1                    | 57.2                 | 897.7                        | 659.6                      | 164.7                                 | 11.1           | 1.000238                  |
| 9500.0                            | 725.4                 | 11.3                          | 2.8                    | 55.8                 | 884.9                        | 658.4                      | 163.8                                 | 11.2           | 1.000232                  |
| 10000.0                           | 712.4                 | 10.3                          | 1.5                    | 54.4                 | 872.2                        | 657.1                      | 162.3                                 | 11.4           | 1.000227                  |
| 10500.0                           | 699.6                 | 9.4                           | 0.3                    | 53.1                 | 859.7                        | 655.9                      | 160.9                                 | 11.6           | 1.000221                  |
| 11000.0                           | 686.8                 | 8.2                           | -0.1                   | 55.6                 | 847.6                        | 654.5                      | 159.0                                 | 11.4           | 1.000218                  |
| 11500.0                           | 674.2                 | 7.0                           | -0.6                   | 58.1                 | 835.5                        | 653.2                      | 156.9                                 | 11.1           | 1.000214                  |
| 12000.0                           | 661.9                 | 5.9                           | -1.1                   | 60.7                 | 823.8                        | 651.8                      | 154.5                                 | 10.7           | 1.000211                  |
| 12500.0                           | 649.7                 | 4.3                           | -1.7                   | 65.0                 | 813.2                        | 649.9                      | 150.6                                 | 10.0           | 1.000208                  |
| 13000.0                           | 637.7                 | 2.5                           | -2.3                   | 68.8                 | 802.5                        | 648.1                      | 146.2                                 | 9.2            | 1.000204                  |
| 13500.0                           | 625.8                 | 2.0                           | -3.5                   | 67.0                 | 790.1                        | 647.1                      |                                       |                | 1.000200                  |
| 14000.0                           | 614.1                 | 1.1                           | -4.6                   | 65.3                 | 777.9                        | 646.1                      |                                       |                | 1.000195                  |

STATION ALTITUDE 3999.00 FEET MSL  
 17 AUG. 54  
 ASCENSION NO. 429 1305 MDT

MANDATORY LEVELS  
 2300020429  
 WHITE SANDS

GEODETIC COORDINATES  
 32.40043 LAT DEG  
 106.77033 LON DEG

TABLE 19

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE                  |                        | REL. HUM.<br>PERCENT | WIND DATA                |                |
|-----------------------|--------|------------------------------|------------------------|----------------------|--------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES<br>CENTIGRADE | DEWPOINT<br>CENTIGRADE |                      | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 850.0                 | 5763.  | 23.1                         | 10.5                   | 45.                  | 177.1                    | 3.4            |
| 800.0                 | 6783.  | 17.7                         | 8.7                    | 56.                  | 173.6                    | 8.5            |
| 750.0                 | 8580.  | 13.1                         | 5.1                    | 58.                  | 164.6                    | 11.0           |
| 700.0                 | 10473. | 9.4                          | .3                     | 53.                  | 161.0                    | 11.6           |
| 650.0                 | 12475. | 4.4                          | -1.7                   | 65.                  | 150.8                    | 10.0           |

GEODETIC COORDINATES  
 32.43034 LAT DEG  
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA  
 2300060148  
 S M R

STATION ALTITUDE 3997.3J FEET MSL  
 17 AUG. 84  
 ASCENSION NO. 146

1305 MDT

TABLE 20

| PRESSURE<br>MILLIBARS | GEOMETRIC<br>ALTITUDE<br>MSL FEET | TEMPERATURE    |                        | REL. HUM.<br>PERCENT |
|-----------------------|-----------------------------------|----------------|------------------------|----------------------|
|                       |                                   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE |                      |
| 832.5                 | 3997.3                            | 29.0           | 14.0                   | 40.0                 |
| 876.1                 | 4209.0                            | 25.6           | 10.6                   | 39.0                 |
| 850.0                 | 5079.3                            | 23.2           | 9.6                    | 42.0                 |
| 796.4                 | 6928.0                            | 17.5           | 8.1                    | 54.0                 |
| 749.4                 | 8626.5                            | 14.1           | 1.7                    | 43.0                 |
| 700.0                 | 10501.7                           | 9.1            | .6                     | 55.0                 |
| 653.7                 | 11943.5                           | 5.6            | -4.8                   | 47.0                 |
| 624.3                 | 13580.1                           | 2.2            | -2.9                   | 69.0                 |

STATION ALTITUDE 3997.33 FEET MSL  
17 AUG. 84  
ASCENSION NO. 148

UPPER AIR DATA  
230006014P  
S M R

GEODETIC COORDINATES  
32.48034 LAT DEG  
106.42307 LON DEG

TABLE 21

| GEOMETRIC<br>ALTITUDE<br>MSL FEET | PRESSURE<br>MILLIBARS | TEMPERATURE<br>AIR<br>DEGREES<br>CENTIGRADE | REL. HUM.<br>PERCENT | DENSITY<br>GM/CUBIC<br>METER | SPEED OF<br>SOUND<br>KNOTS | WIND DATA                |                | INDEX<br>OF<br>REFRACTION |
|-----------------------------------|-----------------------|---|----------------------|------------------------------|----------------------------|--------------------------|----------------|---------------------------|
|                                   |                       |   |                      |                              |                            | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |                           |
| 3997.3                            | 892.5                 | 29.0  | 40.0                 | 1010.5                       | 679.5                      | 180.0                    | 2.9            | 1.000292                  |
| 4000.0                            | 882.4                 | 27.0  | 40.0                 | 1010.6                       | 679.5                      | 179.9                    | 2.9            | 1.000292                  |
| 4500.0                            | 867.3                 | 24.3  | 40.0                 | 1008.5                       | 674.3                      | 170.6                    | 3.9            | 1.000278                  |
| 5000.0                            | 852.3                 | 23.4  | 41.7                 | 995.9                        | 672.7                      | 165.0                    | 4.9            | 1.000274                  |
| 5500.0                            | 837.5                 | 21.9  | 44.7                 | 983.6                        | 671.0                      | 161.3                    | 5.9            | 1.000270                  |
| 6000.0                            | 822.9                 | 20.4  | 46.0                 | 971.5                        | 669.2                      | 158.8                    | 7.0            | 1.000267                  |
| 6500.0                            | 808.5                 | 18.8  | 51.2                 | 959.6                        | 667.4                      | 167.3                    | 8.1            | 1.000263                  |
| 7000.0                            | 794.3                 | 17.4  | 53.5                 | 947.7                        | 665.7                      | 174.6                    | 8.8            | 1.000259                  |
| 7500.0                            | 780.3                 | 16.4  | 50.3                 | 934.6                        | 664.4                      | 181.6                    | 8.9            | 1.000251                  |
| 8000.0                            | 766.4                 | 15.4  | 47.1                 | 921.7                        | 663.1                      | 188.2                    | 8.9            | 1.000243                  |
| 8500.0                            | 752.6                 | 14.4  | 43.8                 | 908.9                        | 661.8                      | 189.0                    | 9.3            | 1.000235                  |
| 9000.0                            | 739.3                 | 13.1  | 45.4                 | 896.5                        | 660.3                      | 184.5                    | 9.9            | 1.000231                  |
| 9500.0                            | 726.0                 | 11.8  | 48.6                 | 884.5                        | 658.7                      | 181.1                    | 10.1           | 1.000226                  |
| 10000.0                           | 712.9                 | 10.4  | 51.8                 | 872.7                        | 657.2                      | 177.1                    | 10.4           | 1.000225                  |
| 10500.0                           | 700.0                 | 9.1   | 55.0                 | 861.0                        | 655.6                      | 172.1                    | 11.3           | 1.000222                  |
| 11000.0                           | 687.2                 | 7.9   | 52.2                 | 849.3                        | 654.1                      | 166.5                    | 11.5           | 1.000216                  |
| 11500.0                           | 674.7                 | 6.7   | 49.5                 | 837.6                        | 652.6                      | 159.8                    | 11.3           | 1.000210                  |
| 12000.0                           | 662.3                 | 5.5   | 47.8                 | 826.0                        | 651.1                      | 154.7                    | 11.0           | 1.000205                  |
| 12500.0                           | 650.0                 | 4.4   | 54.5                 | 813.6                        | 649.9                      |                          |                | 1.000204                  |
| 13000.0                           | 638.0                 | 3.4   | 61.2                 | 801.4                        | 648.8                      |                          |                | 1.000202                  |
| 13500.0                           | 626.2                 | 2.4   | 67.9                 | 789.4                        | 647.6                      |                          |                | 1.000200                  |

STATION ALTITUDE 3957.30 FEET MSL  
 17 AUG. 84  
 ASCENSION NO. 143

MANDATORY LEVELS  
 2300060148  
 S M R  
 TABLE 22

GEODETIC COORDINATES  
 32.48034 LAT DEG  
 106.42307 LONG DEG

| PRESSURE GEOPOTENTIAL |        | TEMPERATURE    |                        | REL. HUM. |  | WIND DATA                |                |
|-----------------------|--------|----------------|------------------------|-----------|--|--------------------------|----------------|
| MILLIBARS             | FEET   | AIR<br>DEGREES | DEWPOINT<br>CENTIGRADE | PERCENT   |  | DIRECTION<br>DEGREES(TN) | SPEED<br>KNOTS |
| 950.0                 | 5076.  | 23.2           | 9.6                    | 42.       |  | 164.3                    | 5.0            |
| 930.0                 | 6796.  | 17.9           | 8.2                    | 53.       |  | 171.8                    | 8.8            |
| 750.0                 | 8597.  | 14.1           | 1.8                    | 43.       |  | 188.1                    | 9.4            |
| 700.0                 | 10491. | 9.1            | .6                     | 55.       |  | 172.1                    | 11.3           |
| 650.0                 | 12490. | 4.4            | -3.9                   | 54.       |  |                          |                |

**END**

**FILMED**

**11-84**

**DTIC**